

Title (en)

OPERATING DEVICE, METHOD FOR OPERATING AN OPERATING DEVICE, DIAPHRAGM PUMP HAVING AN OPERATING DEVICE AND A DIAPHRAGM PUMP DEVICE, AND A BLOOD TREATMENT APPARATUS HAVING A DIAPHRAGM PUMP

Title (de)

BETÄTIGUNGSEINRICHTUNG UND VERFAHREN ZUM BETREIBEN EINER BETÄTIGUNGSEINRICHTUNG SOWIE MEMBRANPUMPE MIT EINER BETÄTIGUNGSEINRICHTUNG UND EINER MEMBRANPUMPENEINRICHTUNG UND EINE BLUTBEHANDLUNGSVORRICHTUNG MIT EINER MEMBRANPUMPE

Title (fr)

DISPOSITIF D'ACTIONNEMENT ET PROCÉDÉ POUR FAIRE FONCTIONNER UN DISPOSITIF D'ACTIONNEMENT AINSI QUE POMPE À MEMBRANE POURVUE D'UN DISPOSITIF D'ACTIONNEMENT ET D'UN DISPOSITIF DE POMPE À MEMBRANE, ET SYSTÈME DE TRAITEMENT DU SANG POURVU D'UNE POMPE À MEMBRANE

Publication

**EP 3559465 A1 20191030 (DE)**

Application

**EP 17816854 A 20171218**

Priority

- DE 102016015207 A 20161221
- EP 2017083404 W 20171218

Abstract (en)

[origin: WO2018114862A1] The invention relates to an operating device (1) for mechanically actuating a diaphragm pump device (2), the operating device having a main body (4) which comprises a mounting face (7) for a diaphragm pump device (2) and through which a control fluid line (33, 35) passes which extends from a control fluid connection (78, 79) to a control fluid opening (34, 36) at the mounting face (7). The control fluid line (33, 35) contains a control fluid valve (74, 75) which is designed to modify a cross-section of the control fluid line (33, 35). The operating device also has an actuating device (9, 14) which comprises a fluid actuator (38) situated on the mounting face (7), for providing an actuation movement, and a working fluid valve (81, 82) which is designed to modify a cross-section of a working fluid line (85, 86) which passes through the main body (4). The control fluid valve (74, 75) and the working fluid valve (81, 82) are electrically connected to a control device (70) which is designed to electrically actuate the control fluid valve (74, 75) and the working fluid valve (81, 82). The invention also relates to a diaphragm pump which has an operating device of this kind and a diaphragm pump device of this kind, and to a blood treatment apparatus which has a diaphragm pump of this kind.

IPC 8 full level

**F04B 43/073** (2006.01)

CPC (source: EP US)

**A61M 60/268** (2021.01 - US); **F04B 43/06** (2013.01 - US); **F04B 43/073** (2013.01 - US); **F04B 43/0733** (2013.01 - EP US); **F04B 49/065** (2013.01 - US); **F04B 49/22** (2013.01 - US); **F04B 2201/12** (2013.01 - US); **F04B 2205/01** (2013.01 - US)

Citation (search report)

See references of WO 2018114862A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**DE 102016015207 A1 20180621**; CN 110088474 A 20190802; CN 110088474 B 20220426; EP 3559465 A1 20191030; EP 3559465 B1 20201209; JP 2020514612 A 20200521; JP 7086965 B2 20220620; US 11441554 B2 20220913; US 2019353159 A1 20191121; WO 2018114862 A1 20180628

DOCDB simple family (application)

**DE 102016015207 A 20161221**; CN 201780079316 A 20171218; EP 17816854 A 20171218; EP 2017083404 W 20171218; JP 2019533617 A 20171218; US 201716470564 A 20171218